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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,368	01/31/2002	Stephen James Todd	GB920010046US1	2907
7590	11/12/2004			
IBM Corp, IP Law 11400 Burnett Road, Zip 4054 Austin, TX 78758				
EXAMINER LAROSE, COLIN M				
ART UNIT PAPER NUMBER				
2623				

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/062,368	Applicant(s) TODD, STEPHEN JAMES	
	Examiner Colin M. LaRose	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/02, 6/02</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23 and 24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 23 recites a computer program, which is non-statutory unless the program is stored on a computer-readable medium that includes the instructions for executing the program.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 9-14, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,847,786 by Wang et al. ("Wang").

Regarding claims 1, 9, and 23, Wang discloses a method, system, and program for processing an image consisting of an array of pixels, the method comprising the steps of:

performing a scan of said array of pixels in a sequential manner, each pixel of said array being scanned once in order to provide pixel data (column 7, lines 3-18: pixels are successively scanned and each assigned an object label ("pixel data"));

identifying, using said pixel data, those pixels of the array which contain image information of significance (as shown in figure 5B, significant objects are identified by positive numbers; the insignificant background is identified as "0");

assigning each pixel containing image information of significance to one of at least one image segment, the at least one image segment including a number of contiguous pixels containing image information of significance (as shown in figure 5B, each significant pixel is assigned to an object ("segment") that contains a number of contiguous pixels); and,

providing an image data output including summary information pertaining to the at least one image segment (figure 5B provides a summary of the identified objects ("segments")).

Regarding claims 2 and 10, Wang discloses said step of assigning each pixel further comprises a step of determining, for each pixel containing image information of significance, whether there is at least one contiguous pixel assigned to a segment, in order to determine to which of said at least one segment that pixel shall be assigned (see column 7, lines 3-18 and figure 6).

Regarding claims 3 and 11, Wang discloses the step of selectively merging at least two segments to form a single segment in dependence upon whether one pixel containing image information of significance is contiguous with at least two pixels each assigned to a different one

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of said at least two segments (see column 7, lines 46-57 – two different objects are merged into a single object in dependence upon whether the pixel being scanned has the same classification as two contiguous pixels).

Regarding claims 4 and 12, Wang discloses said step of determining is performed using a buffer register arranged to store segment information for previously scanned pixels of the array (column 7, lines 38-49).

Regarding claims 5 and 13, Wang discloses the at least one contiguous assigned pixel is above a pixel in the array (i.e. at least one of the contiguous pixels is in the upper right corner of the 2x2 scanning window).

Regarding claims 6 and 14, Wang discloses the at least one contiguous assigned pixel is to the left of a pixel in the array (i.e. at least one of the contiguous pixels is in the lower left corner of the 2x2 scanning window).

Regarding claim 24, Wang discloses a carrier containing a computer program as claimed in claim 23 (i.e. Wang discloses an apparatus containing the program).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 8, and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of U.S. Patent 4,742,551 by Deering.

Regarding claims 7 and 15, Wang discloses a register is kept of the at least one image segment, the register being arranged to record location information regarding the at least one segment (column 7, lines 38-49: a register records the labeled image as shown in figure 5B, which includes the segment location information (i.e. the location of the objects)).

Wang does not disclose that the register records “summation information” or “cumulative pixel value” regarding the at least one segment.

Deering discloses an image processing system that calculates various statistics for regions in an image. In particular, Deering discloses calculating and storing summation information pertaining to the values of pixels in a certain region (see column 6, line 64 through column 7, line 7; see also figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang by Deering to achieve the claimed invention by registering summation information/cumulative pixel value information pertaining to the segment(s) since Deering teaches that such information is utilized for performing various analyses of image regions, such as determining the area or centroid of a region (see column 6, lines 64-68).

Regarding claim 16, Deering discloses including x-axis and y-axis cumulative coordinate values of the at least one segment (column 7, lines 1-7: Σx and Σy).

Regarding claim 17, Deering discloses the x-axis and y-axis cumulative coordinate values include $x\text{-axis} \times x\text{-axis}$, $x\text{-axis} \times y\text{-axis}$, and $y\text{-axis} \times y\text{-axis}$ summation values (column 7, lines 1-7: Σx^2 , Σy^2 , and Σxy).

Regarding claim 18, Wang discloses the addition of a pixel to one of the at least one segment includes the assimilation of coordinate values for the pixel into the registers for the one of the at least one segment (column 7, lines 38-40: the labeled image, which contains the coordinates of the pixels added to their respective segments, is stored in the register).

Regarding claim 19, Wang discloses the at least one segment comprises at least two segments (see figure 5B), and wherein the merging of two of the at least two segments includes the assimilation of corresponding coordinate values for the two of the at least two segments into the coordinate values of a single merged segment (column 7, lines 45-55: the merging of two segments creates a single segment that comprises with the coordinate values of the two previously unmerged segments).

Regarding claim 20, Deering discloses the summation information and location information regarding the at least one segment are used after a complete scan to compute the centre and size of the at least one segment (column 6, lines 64-68: summation information used for area and centroid calculations).

Regarding claim 21, Deering discloses additional coordinate values are used to compute shape and orientation approximations for the at least one segment (see Table 7, column 1: additional x and y values are used to compute x and y projections that indicate the shape and orientation of a segment).

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Regarding claims 8 and 22, Wang discloses the image represents human computer input (i.e. a human aids in imputing the image via a computer).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

CML

Group Art Unit 2623

9 November 2004



VIKKRAM BALI
PRIMARY EXAMINER